

CLAIMS

What is claimed is:

1. A method of forwarding diagnostic messages among members of groups in a data processing system while the members are executing protocols, comprising the steps of:

attaching a header to the message, the header including the following header fields:

(1) a protocol handle identifying the originator protocol from which the request originated; and

(2) a forwarding handle identifying, if present, a protocol which is the current parent of the protocol;

sending the diagnostic message to the member of the group identified by the forwarding handle.

2. The method of Claim 1, wherein the identified forwarding handle is of null value and the protocol is an original protocol, and said step of sending comprises: sending the diagnostic message to the member of the group which originated the protocol.

3. The method of Claim 2, further including the step of: including in the header to the message an identifier of the member and group which originated the message.

4. The method of Claim 1, further including the step of: including in the header to the message an identifier of the member and group of the parent protocol originator, if any, which originated the message.

1 5. A computer system including a plurality of groups, each group composed of
2 one or more members, said computer system forwarding diagnostic messages among
3 the members of the groups and including:

4 means for forming a message including in its header message the following
5 header fields:

- 6 (1) a protocol handle identifying the originator protocol from which
7 the request originated; and
8 (2) a forwarding handle identifying, if present, a protocol which is
9 the current parent of the protocol;

10 means for sending the diagnostic message to the member of the group
11 identified by the forwarding handle.

12 6. The computer system of Claim 5, wherein the identified forwarding handle is
13 of null value and the protocol is an original protocol, and said means for sending
14 comprises:

15 means for sending the diagnostic message to the member of the group which
16 originated the protocol.

17 7. The computer system of Claim 5, wherein said means for forming a header
18 message further includes:

19 means for including in the header to the message an identifier of the member
20 and group which originated the diagnostic message.

21 8. The computer system of Claim 5, wherein said means for forming a header
22 message further includes:

23 means for including in the header to the message an identifier of the member
24 and group of the parent protocol originator, if any, which originated the diagnostic
25 message.

1 9. A computer memory element containing stored in signal bearing media a
2 diagnostic message forwarded among members of one or more groups in a computer
3 system, the stored diagnostic message containing a header message including the
4 following header fields:

5 (1) a protocol handle identifying the originator protocol from which the
6 request originated; and

7 (2) a forwarding handle identifying, if present, a protocol which is the
8 current parent of the protocol.

10. The computer memory element of Claim 9, wherein the header message
contained in the stored diagnostic message further includes:

an identifier of the member and group which originated the diagnostic
message.

11. The computer memory element of Claim 9, wherein the header message
contained in the stored diagnostic message further includes:

an identifier of the member and group of the parent protocol originator, if any,
which originated the diagnostic message.

12. A method of forwarding diagnostic messages among members of groups in a
data processing system to those members executing protocols implicated by the
message, comprising the steps of:

forwarding as part of the diagnostic message a header including the following
header fields:

(1) a protocol handle identifying the originator protocol from which
the request originated; and

(2) a forwarding handle identifying, if present, a protocol which is
the current parent of the protocol;

10 examining the forwarding handle at each member of the groups of the system
11 to ascertain if that member was a parent of the protocol identified in the forwarding
12 handle field of the header of the diagnostic message.

13 13. The method of Claim 12, further including the step of:
14 forwarding another diagnostic message having a header including the
15 following header fields:

16 (1) a protocol handle identifying the originator protocol from which
17 the request originated; and

18 (2) a forwarding handle identifying, if present, a protocol which is
19 the current parent of the protocol.

20 14. The method of Claim 13, further including the step of:
21 sending the diagnostic message to the member of the group identified by the
22 forwarding handle of another diagnostic message.

23 15. The method of Claim 14, further including the step of:
24 repeating the steps of Claims 13 and 14 until the forwarding handle of the
25 header field indicates the protocol is an original protocol.